



NXP Semiconductors introduces its full-bridge digital-in mono Class D audio amplifier with feedback loop for IOT applications, TFA8200

Digital-in audio amplifier for IOT applications

The TFA8200 is a closed-loop filter-less class D audio amplifier with digital inputs, mainly intended for low power portable, mobile and IOT applications that are using a digital interface

OVERVIEW

The TFA8200 is a BTL audio Class D amplifier with digital inputs for portable applications.

The device features a full digital Class D amplifier with feedback, resulting in the following key advantages: RF immunity, high supply voltage rejection ratio and a fixed gain (not modulated by the supply voltage).

The continuous-time output power is 2.7 W at 5V supply in 4Ω.

The TFA8200 contains sound processing features like a DRC and equalizer. It comes with two separate digital audio inputs, so that the audio amplifier can be connected to both the Baseband and the Multimedia IC.

The high-efficient Class D amplifier offers extended battery life along with rich audio performance.

KEY FEATURES

- ▶ Maximum voltage rating 2.5 to 5.5 V
- ▶ High efficiency and low-power dissipation
- ▶ Maximum RMS output power
 - 1.6 W into 8Ω at 5.0 V supply
 - 2.7 W into 4Ω at 5.0 V supply

- ▶ HVQFN 24 package
- ▶ DSP features
 - Digital parametric 5-band equalizer
 - Digital volume control (-70dB to 24dB)
 - Bass Control (-18dB to 18dB)
 - Treble Control (-18dB to 18dB)
 - Dynamic Range Compression (DRC)
 - Option for DC blocking via high pass filter
 - Programmable Power limiter
 - Soft and hard mute
- ▶ Soft clipping option



DIGITAL AUDIO INPUT INTERFACE FORMATS

- ▶ I²S interface format (Fs = 8 kHz to 96 kHz)
- ▶ PCM interface format
- ▶ IOM2

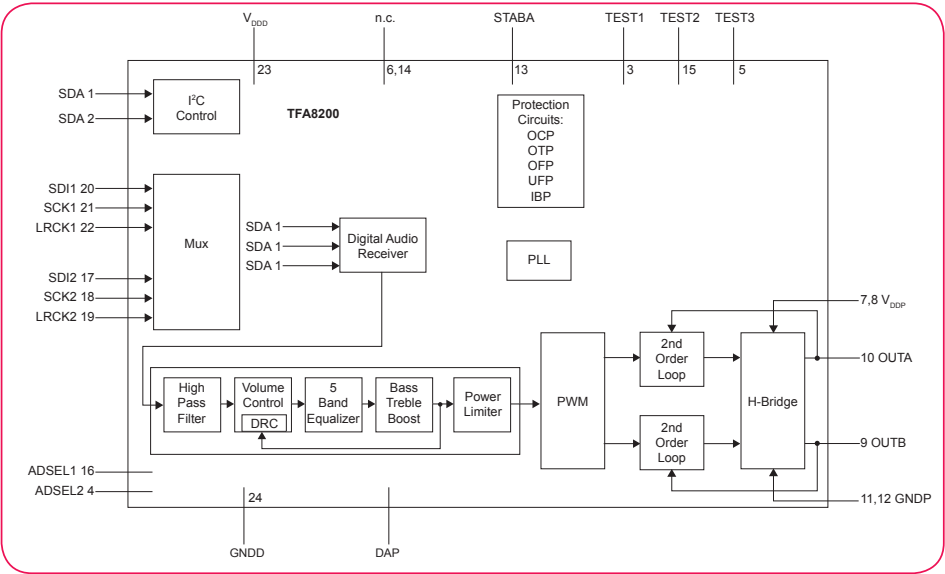
APPLICATIONS

- ▶ Internet of things (IOT) Devices
- ▶ Desktop PC's and notebooks
- ▶ Portable gaming devices

ORDERING INFORMATION

- ▶ TFA8200HN/N1
- ▶ Package: HVQFN24

BLOCK DIAGRAM



REFERENCE DATA

Vp	Min	Typ	Max
PVDD	2.5 V		5.5 V
DVDD	1.65 V	1.80 V	1.95 V

Pout with clip control enabled	Typ
40hm, 3.7V, 10% THD	1.3W
40hm, 5V, 10% THD	2.4W
80hm, 3.7V, 10% THD	750mW
80hm, 5V, 10% THD	1.4W
Pout with clip control disabled	Typ
40hm, 5V, 10% THD	2.7W
80hm, 5V, 10% THD	1.6W
Typ	
THD+N	0.02%
PSRR (217Hz)	>70dB
SNR	>90dB